

## CONTAMINANT RESISTANT PRODUCT PACKAGING

### PRIORITY CLAIM

[0001] This patent application is a continuation in part application of and claims priority from copending U.S. Non-Provisional patent application Ser. No. 16/655,055 filed Oct. 16, 2019, and entitled, "Contaminant Resistant Product Packaging," and is a continuation in part application of and claims priority from copending U.S. Non-Provisional patent application Ser. No. 16/707,965 filed Dec. 9, 2019, and entitled, "Contaminant Resistant Product Packaging," the contents of which are all hereby incorporated by reference in their entirety.

### BACKGROUND

[0002] The present disclosure relates generally to product packaging. Known product packaging is not satisfactory for situations where contamination from ambient contaminants is of concern. For example, a gluten free product cannot be baked in an ambient environment that is not entirely free of gluten particles. In such situations where cooking occurs in an ambient environment with gluten contamination, the gluten free product may become contaminated with gluten particles from the ambient environment during baking and/or during handling of the baked product after baking.

[0003] As another example, some individuals are highly allergic to peanuts or other particles. When a meal is prepared for such at-risk individuals, special procedures and/or equipment is required for safe food preparation so that the prepared meal is not contaminated with peanut particles.

[0004] As yet another example, some non-food product items may need to be heated in a package such that ambient contaminants do not enter the product package during and/or after heating. An example is sterilization of medical equipment.

[0005] Accordingly, there exists a need in the product packaging arts for improved product packaging that protects packaged products from contaminants.

### SUMMARY

[0006] The present disclosure is directed to a sealable enclosure that is configured to enclose an object that is to be heated, wherein heating of the sealable enclosure with the object sealed therein permits gas generated by the heating to vent out through a first micro-pore portion disposed in a fold of film layer. Initially, the generated gas is retained in the sealable enclosure. When the temperature of the strip of heat sensitive adhesive reaches a threshold temperature, the strip of heat sensitive adhesive releases so that fold opens, wherein the gas vents through the micro-pore portion disposed in the film layer out into an ambient region surrounding the sealable enclosure while preventing ambient contaminants in the ambient region from entering into the sealable enclosure.

### BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIG. 1 is a perspective view of a film layer of an example sealable enclosure embodiment.

[0008] FIG. 2 is a cross sectional view of an example embodiment of the enclosure portion of an example sealable enclosure embodiment.

[0009] FIG. 3 is perspective view of the top surface of an example film layer of an example sealable enclosure embodiment.

[0010] FIG. 4 is a cross sectional view of an example sealable enclosure embodiment before heating.

[0011] FIG. 5 is a cross sectional view of an example sealable enclosure embodiment during the heating and gas venting process.

[0012] FIG. 6 is a perspective view of a single sheet of packaging with two micro-pore portions that can be folded and sealed to form a sealable enclosure embodiment.

[0013] FIG. 7 is a perspective view of an example sealable enclosure embodiment.

[0014] FIG. 8 is a cross sectional view of the example embodiment shown in FIG. 7 prior to heating.

[0015] FIG. 9 is a cross sectional view of an example first alternative embodiment before release of strip of heat sensitive adhesive during the heating process.

[0016] FIG. 10 is a cross sectional view of an example second alternative embodiment before release of strip of heat sensitive adhesive during the heating process.

[0017] FIG. 11 is a cross sectional view of an example third alternative embodiment with a plurality of sealed folds in the film layer.

[0018] FIG. 12 is a diagram of a micro-pore fabric section constructed from a plurality of non-woven fibers.

### DETAILED DESCRIPTION

[0019] Heating of a sealable enclosure embodiment with an object sealed therein permits gas generated by the heating to vent out from the sealable enclosure into an ambient region surrounding the sealable enclosure while preventing ambient contaminants in the ambient region from entering into the sealable enclosure. The disclosed sealable enclosure embodiments will become better understood through review of the following detailed description in conjunction with the figures. The detailed description and figures merely provide examples of the various invention embodiments described herein. Those skilled in the art will understand that the disclosed example embodiments may be varied, modified, and altered without departing from the scope of the invention as described herein. Many variations are contemplated for different applications, manufacture, and design considerations. However, for the sake of brevity, each and every contemplated variation is not individually described in the following detailed description.

[0020] Throughout the following detailed description, examples of various sealable enclosure embodiments are provided. Related features in the example embodiments may be identical, similar, or dissimilar in different examples. For the sake of brevity, related features will not be redundantly explained in each example. Instead, the use of related feature names will cue the reader that the feature with a related feature name may be similar to the related feature in an example explained previously. Features specific to a given example will be described in that particular example. The reader should understand that a given feature need not be the same or similar to the specific portrayal of a related feature in any given figure or example embodiment.

[0021] The following definitions apply herein, unless otherwise indicated. "Substantially" means to be more-or-less conforming to the particular dimension, range, shape, concept, or other aspect modified by the term, such that a feature or component need not conform exactly. For example, a